



# Cranes

## *Flagships for Biodiversity Conservation and Sustainable Livelihoods in Africa*

Dr. Richard Beilfuss  
International Crane Foundation





# Overview



Why cranes (cherished and endangered)

From cranes to landscapes -  
sentinels, ambassadors, & flagships

Community and protected lands conservation  
through the charism of cranes



**Crane conservation status**

- C** Critically endangered
- E** Endangered
- V** Vulnerable
- N** Near threatened
- L** Least concern

- Migration route to wintering area
- ◇ Breeding, staging, or wintering area for multiple species

Corresponding colors represent ranges.



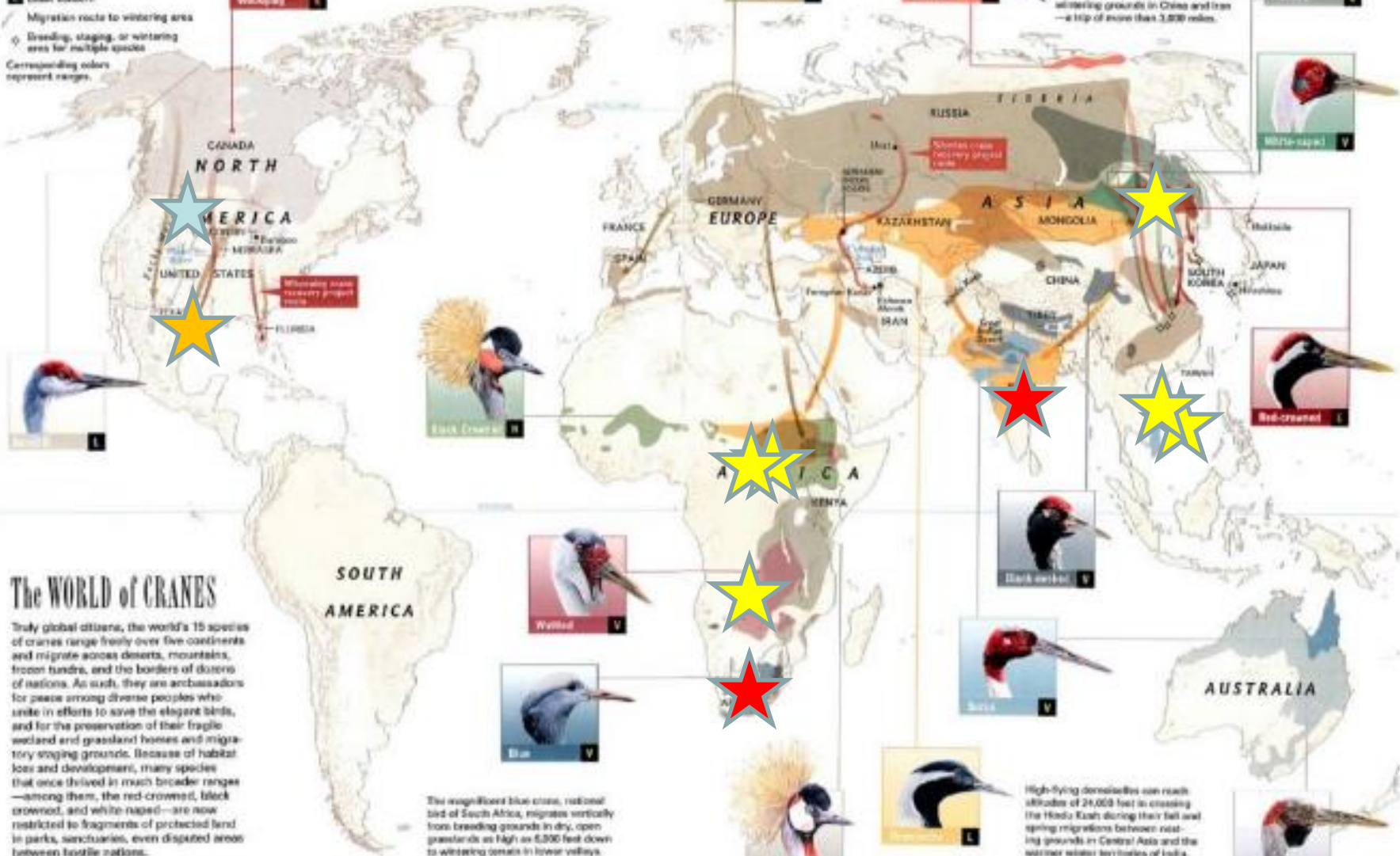
Rarest of cranes, the whooping crane once ranged across North America east of the Rockies. Two small populations now migrate between nesting grounds in Canada and Wisconsin and winter territory in Texas and Florida.



The most far-flying of cranes, the Siberian nests in wetlands near the Arctic Circle, then journeys south over vast stretches of inhospitable terrain and six different nations to its wintering grounds in China and Iran—a trip of more than 3,000 miles.



High-flying domesticates can reach altitudes of 21,000 feet in crossing the Hindu Kush during their fall and spring migrations between nesting grounds in Central Asia and the warmer water territories of India.



**The WORLD of CRANES**

Truly global citizens, the world's 15 species of cranes range freely over five continents and migrate across deserts, mountains, frozen tundras, and the borders of dozens of nations. As such, they are ambassadors for peace among diverse peoples who unite in efforts to save the elegant birds, and for the preservation of their fragile wetland and grassland homes and migratory staging grounds. Because of habitat loss and development, many species that once thrived in much broader ranges—among them, the red-crowned, black crowned, and white-naped—are now restricted to fragments of protected land in parks, sanctuaries, even disputed areas between hostile nations.

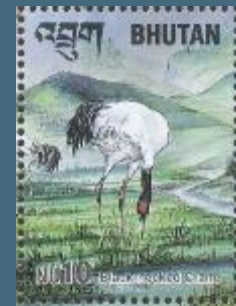
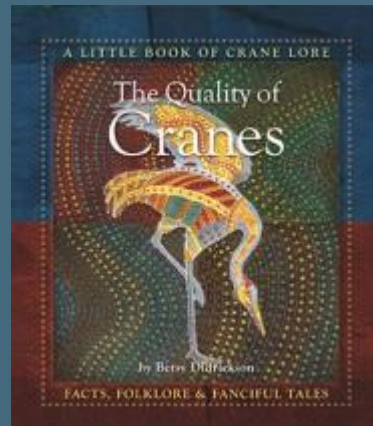
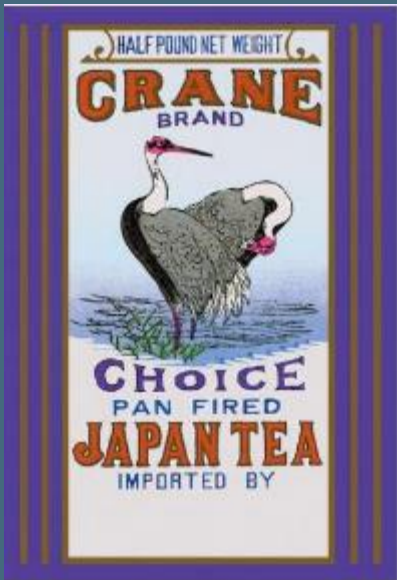
The magnificent blue crane, national bird of South Africa, migrates vertically from breeding grounds in dry, open grasslands as high as 6,500 feet down to wintering centers in lower valleys.

SOURCES: THE CRANE CENTER FOR RESEARCH AND CONSERVATION OF NORTH AMERICAN CRANES, WILSON PHILIPSON, AND JAMES HARRISON, CRANES: BEHAVIOR AND MIGRATION OF THE WORLD'S CRANES, AND BY HANCOCK, BRADSHAW, NATIONAL GEOGRAPHIC SOCIETY











POSTES 1992 CONGO  
*Bucyranus carunculatus*

REPUBLIQUE DU NIGER  
2F

REPUBLIQUE DU NIGER  
2F

MAURITANIE  
1/3

CROWN BIRD  
REPUBLIC OF NIGERIA  
MAURICE FIEVET  
1/3

ALGERIE الجزائر  
30,00

المملكة المغربية  
البريد  
2.00  
ROYAUME DU MAROC

REPUBLIQUE DU MALI  
POSTE AERIENNE  
200  
PROTECTION DE LA FAUNE

MBIA

REPUBLIQUE ISLAMIQUE DE MAURITANIE  
50

P1.75  
Botswana

Gefährdete Arten  
Vereinte Nationen

THE GAMBIA  
75b

20

100f  
ROYAUME DU BURUNDI

125 P.T.  
130  
السودان  
SUDAN

20n  
ZAMBIA

ANGOLA  
26,00

NAMIBIA  
N\$ L60

REPUBLIQUE DE GUINEE

REPUBLIQUE DU SENEGAL  
POSTE AERIENNE

REPUBLIQUE DU CAMEROUN  
50f  
UNITED REPUBLIC OF CAMEROON

LESOTHO

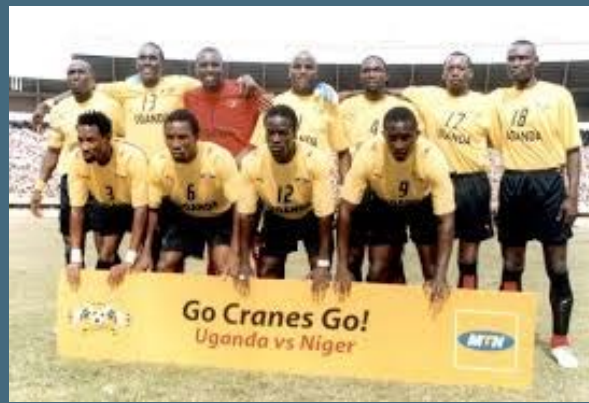
REPUBLIQUE FEDERALE DU CAMEROON  
CAMP DE WAZ  
GENERAL REPUBLIC OF CAMEROON

GHANA

Suid-Afrika  
GRUS CARU  
DENIS MURPHY

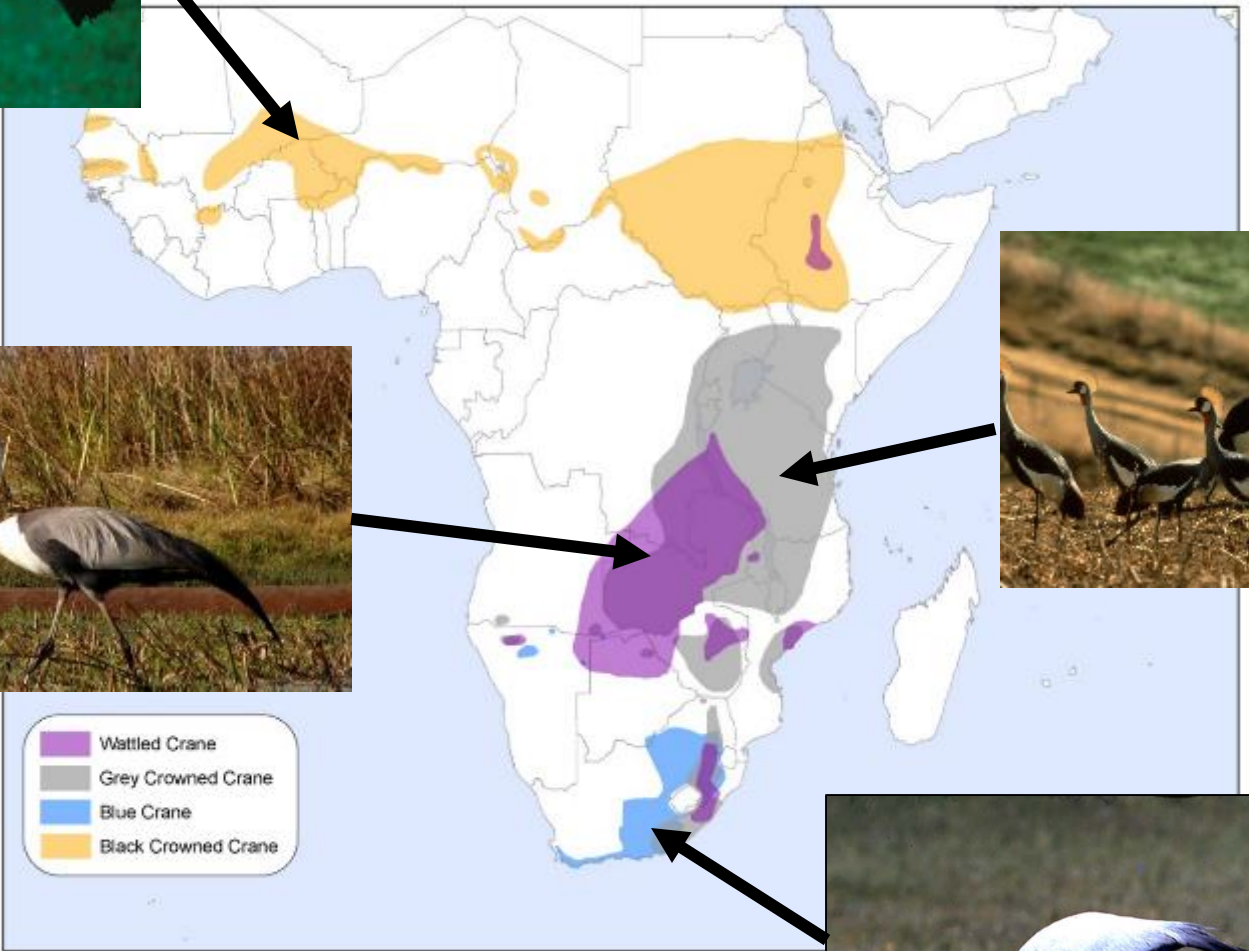
REPUBLIQUE RWANDAISE  
20f





# A most endangered family of birds





- Wattled Crane
- Grey Crowned Crane
- Blue Crane
- Black Crowned Crane





Grey Crowned Crane	Endangered	<31,000	Rapidly decreasing
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**Black Crowned Crane**

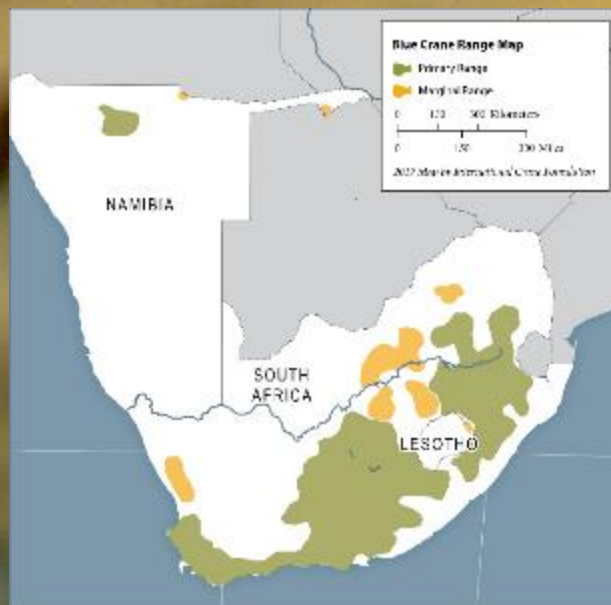
**Vulnerable**

**~35,000??**

**Decreasing/unknown**



Wattled Crane	Vulnerable	~9,600	Decreasing
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Blue Crane

**Vulnerable**

>25,000

Increasing

# Loss and degradation of wetlands





# Over-exploitation of wetland resources



# Hydrological change resulting from dams...



...water diversions...



# ...climate change (diverse impacts)



# Catchment degradation



# Water quality degradation



# Uncontrolled fires



# Invasive species

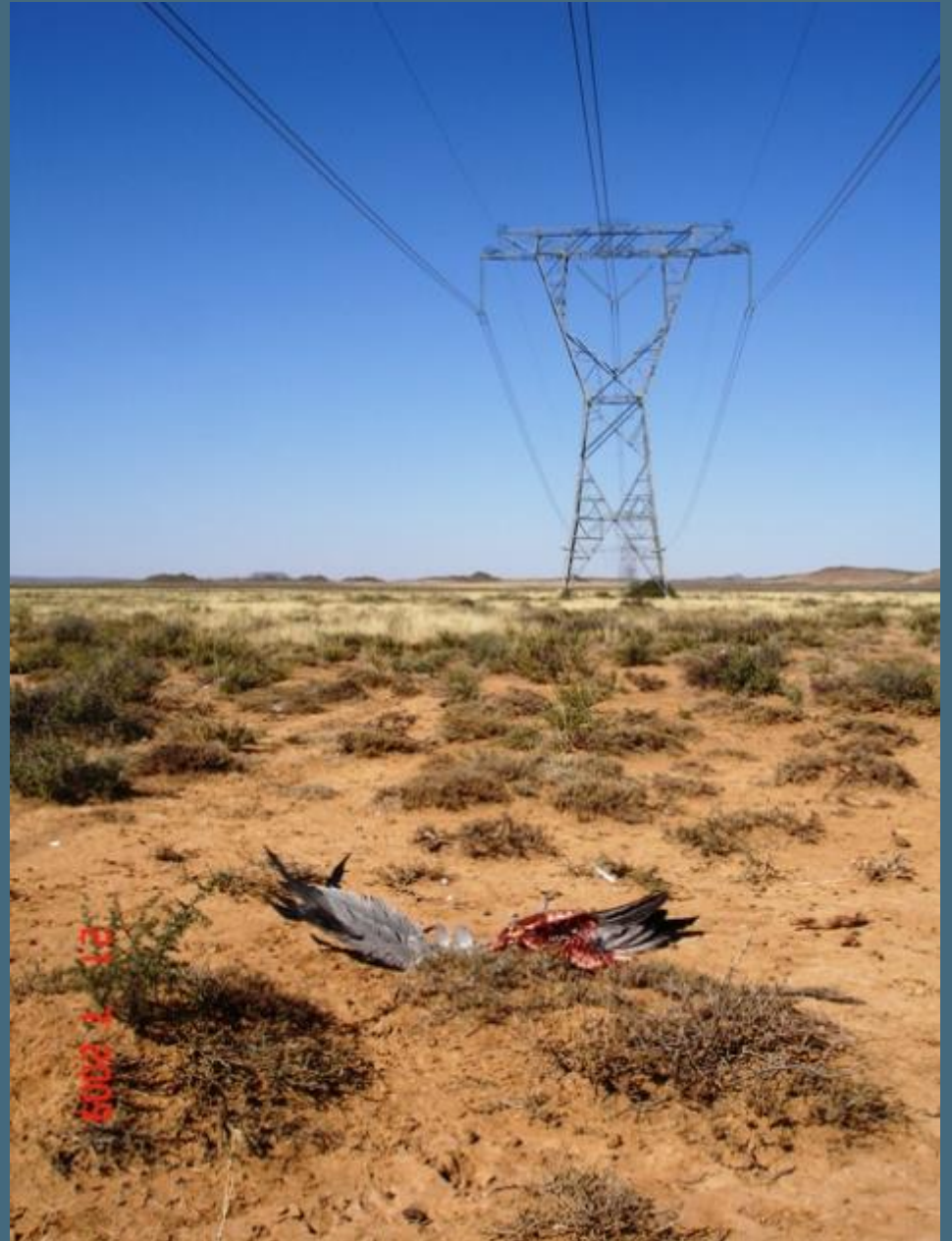




# Illegal trade and domestication



# Poisoning and powerline collisions





# Scaling-up from cranes to landscapes



#1 Sentinels of ecological health and change





# Scaling-up from cranes to landscapes



#2 Ambassadors bringing people together for conservation action across borders and regions



Korean Crane Network Meeting

한국두루미네트워크 회의



# Scaling-up from cranes to landscapes



#3 Flagships for wild and working landscapes



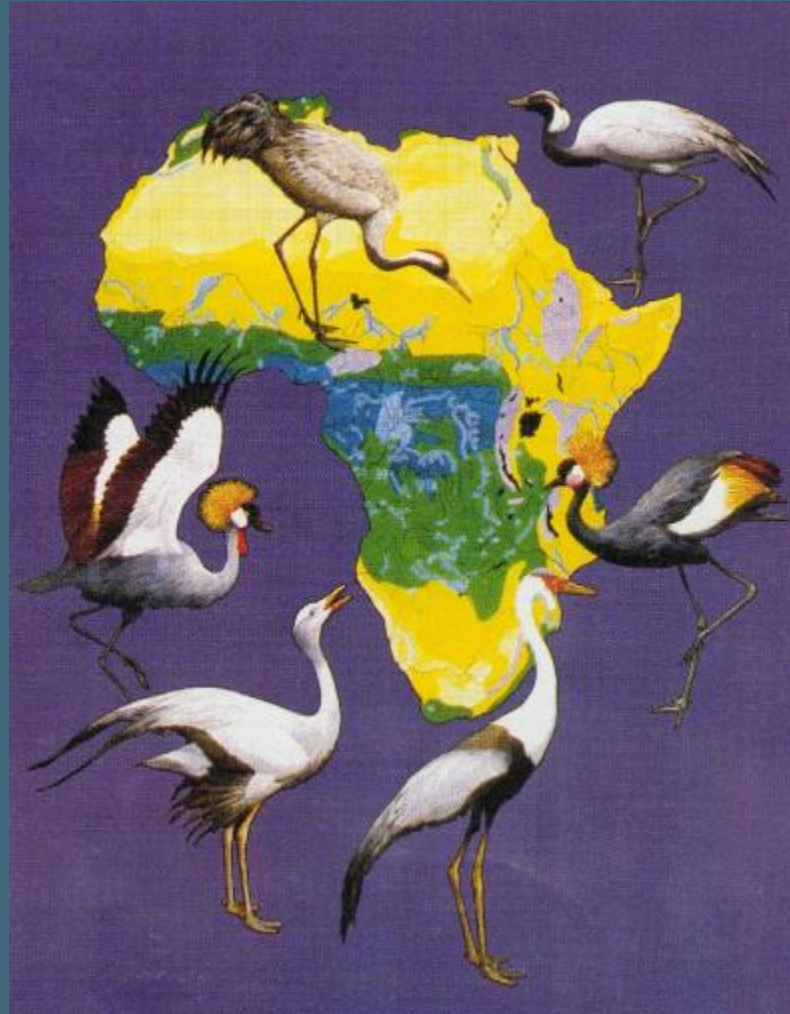
46 National Crane Nature Reserves protecting 71 million acres in China!







# Community and protected lands conservation through the charisma of cranes





# Cranes, wetlands, and livelihoods in East Africa





White Nile River Basin

River

Capital City

ICF Project Site

INTERNATIONAL CRANE FOUNDATION  
www.savingcranes.org

D. R. CONGO

UGANDA

Nile River

Kampala

Saiwa Swamp

Busia Swamp

Kingwal Swamp

Kaku-Kiyanja Wetland

Rwebicere Swamp

KENYA

Nairobi

Nyamuriro Wetland

Ruegezi Swamp

RWANDA

Kigali

BURUNDI

Bujumbura

Lake Victoria

TANZANIA







**Community-based leaders and community-based conservation efforts since early 1990s in Kenya and Uganda**





**TORIKWIKIRIZIBWA !**  
KUTAHIRIRA AKACWEKA  
KORUFUNJO AKU ABATAKA  
BAHERIZE KUGARURAHO  
BUSYA AHARI NYAMURIRO

NatureUganda

KABALE DISTRICT  
LOCAL GOVERNMENT

**Establishing Community Site Stewardship Network**



Promoting conservation awareness through drama, dance, debate, and song



**School Conservation Clubs**



**Wildlife Clubs**



**Developing fishponds adjacent to sensitive wetland areas**



**Reforesting catchments with indigenous species**



**Restoring abandoned farmland back to productive wetland**

# Urgent need to scale-up

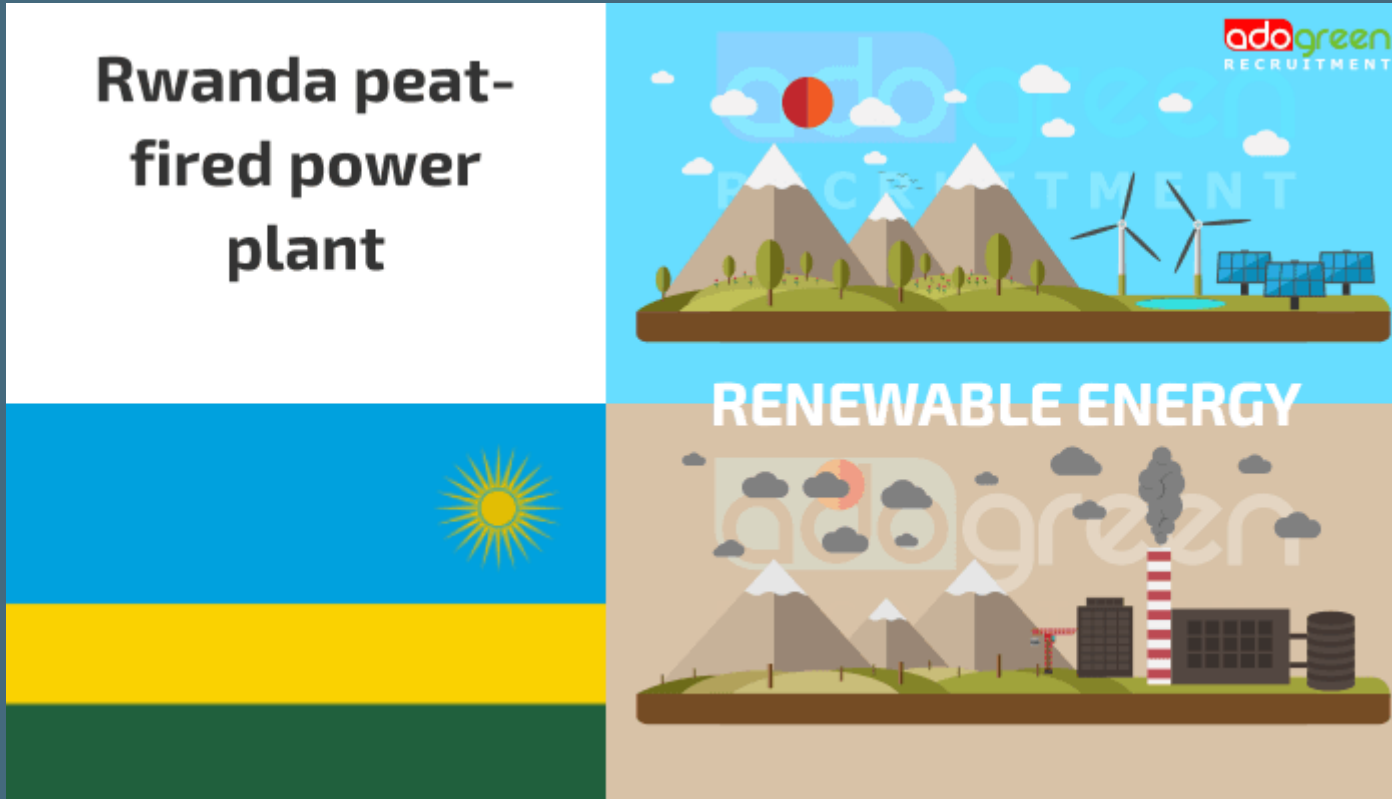


**Conservation challenges growing significantly with population, health, and environmental pressures and declining livelihoods in the region...**



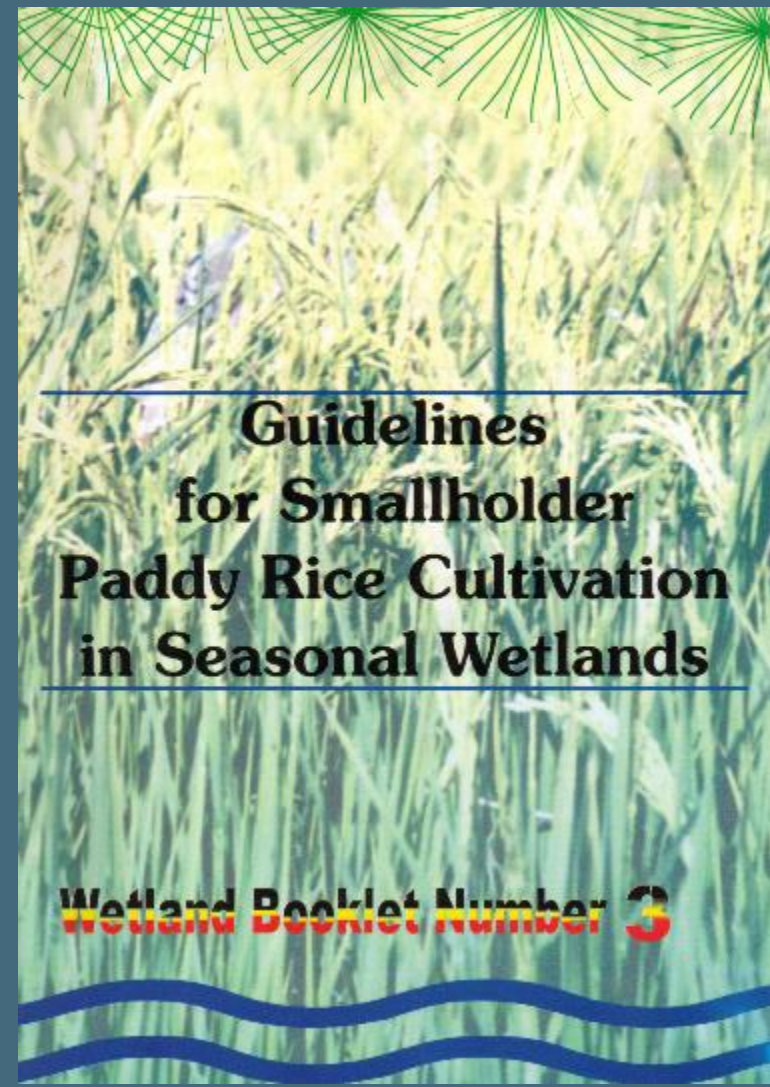
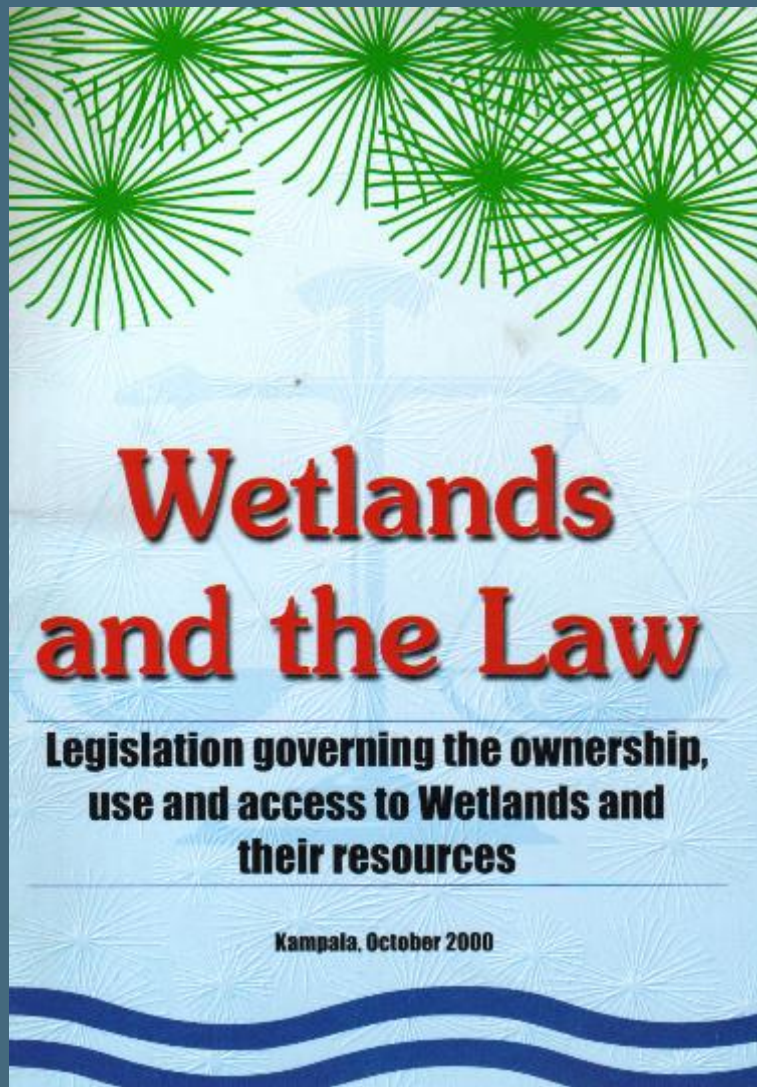
# Urgent need to scale-up

**Rwanda peat-fired power plant**



...and chronic energy demands pushing unsustainable land use decisions





Working legal and policy frameworks insufficient



**Adopting more holistic conservation approach through  
P-H-E Sustainable Livelihoods framework**



Population & Sustainability Network  
PROMOTING REPRODUCTIVE RIGHTS FOR SUSTAINABLE DEVELOPMENT



ENDANGERED  
WILDLIFE TRUST  
[www.ewt.org.za](http://www.ewt.org.za)

In partnership  
with



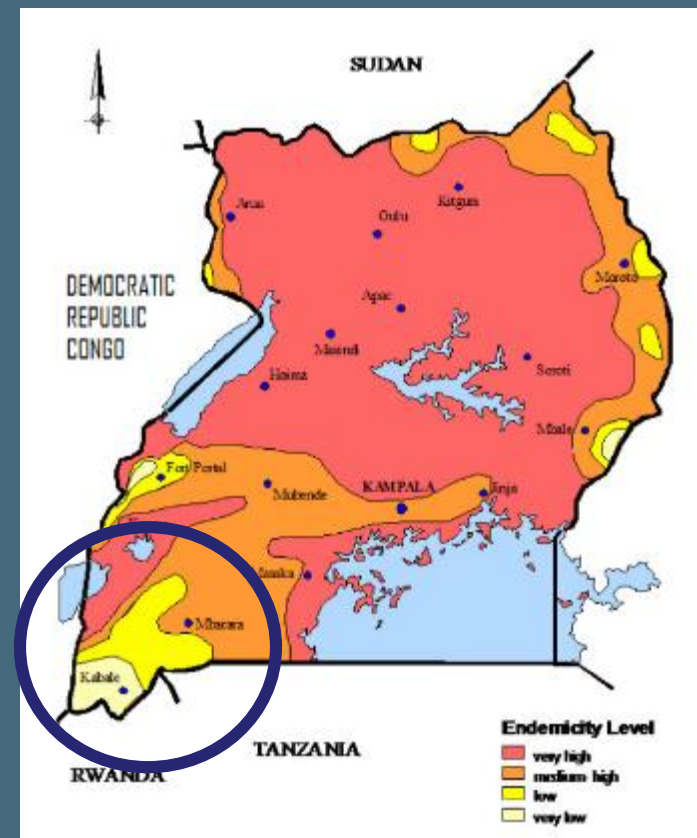
## Population



- > Empowering women and men to make informed household decisions
- > Supporting girls to remain in school for full education
- > Focusing on most vulnerable sectors of communities where we work



## Health and Climate Resiliency



- > Targeting key environmental issues linked to community health
- > Resiliency to changing climate (ex. Malaria)



In partnership with



## Environment and sustainable livelihoods



> Significantly scaling up bamboo production and market access



In partnership  
with



## Environment and sustainable livelihoods



- > Significantly scaling-up upland fodder production
- > Shifting from training to mentoring successful implementation





COMMUNITY ACTION FOR NATURE CONSERVATION



ENDANGERED  
WILDLIFE TRUST  
[www.ewt.org.za](http://www.ewt.org.za)

In partnership  
with



## Environment and sustainable livelihoods



> Point water source and water tower protection

# Sustainable Tourism Benefit Streams



# Sustainable Tourism Benefit Streams





CONSERVATION INTERNATIONAL



the Jane Goodall Institute



The Nature Conservancy  
Protecting nature. Powering life.



WORLD RESOURCES INSTITUTE



# AFRICA BIODIVERSITY COLLABORATIVE GROUP



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Sharing experience and lessons learned from private lands conservation



# Biodiversity and ecosystem services on Southern African floodplains



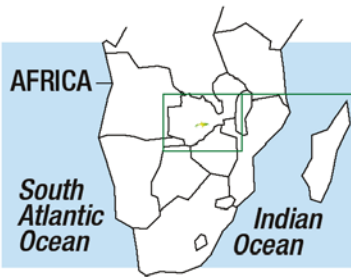
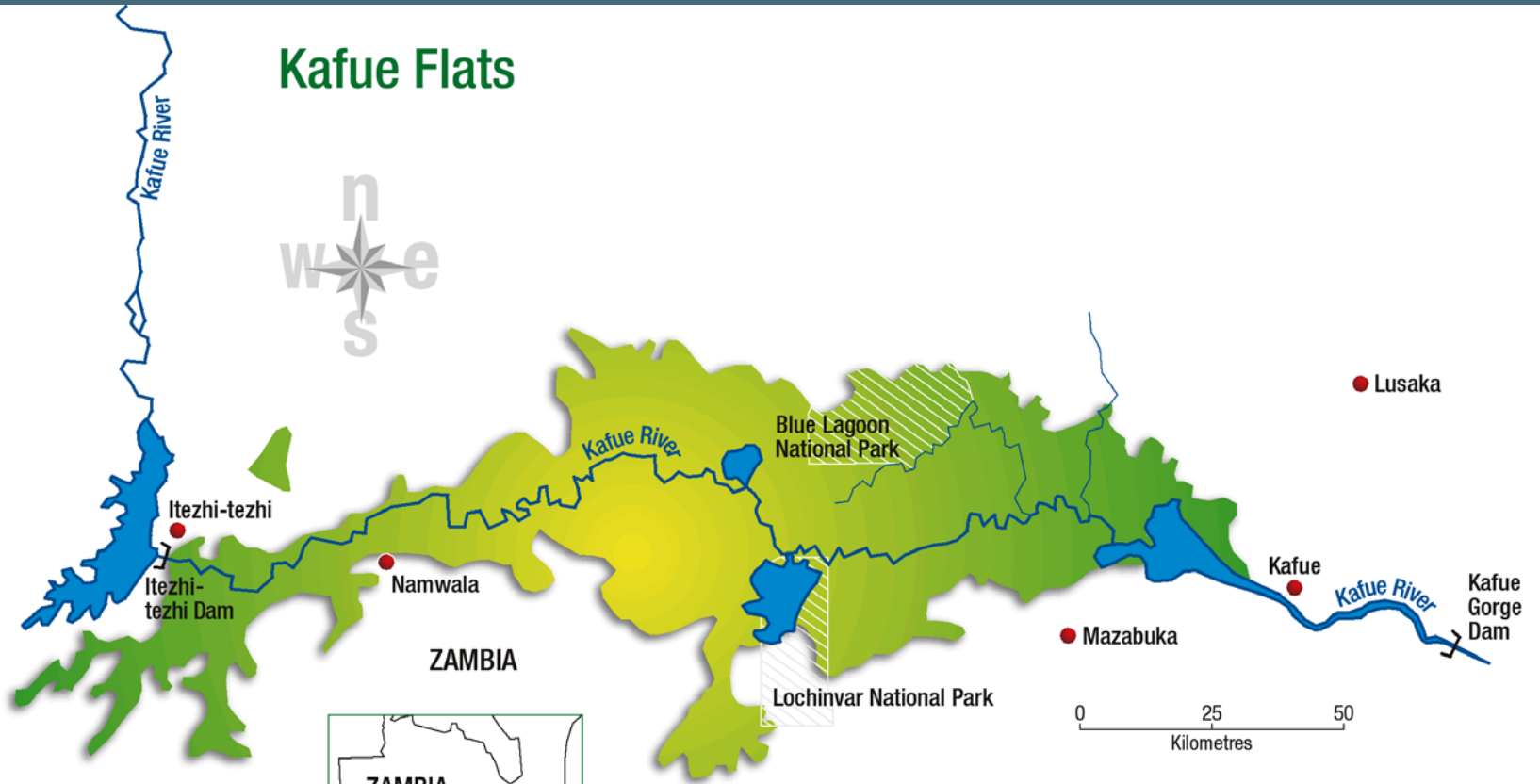


>80% of global  
Wattled Crane  
population on  
five great  
floodplains

# Protected area management linked with community engagement



# Kafue Flats







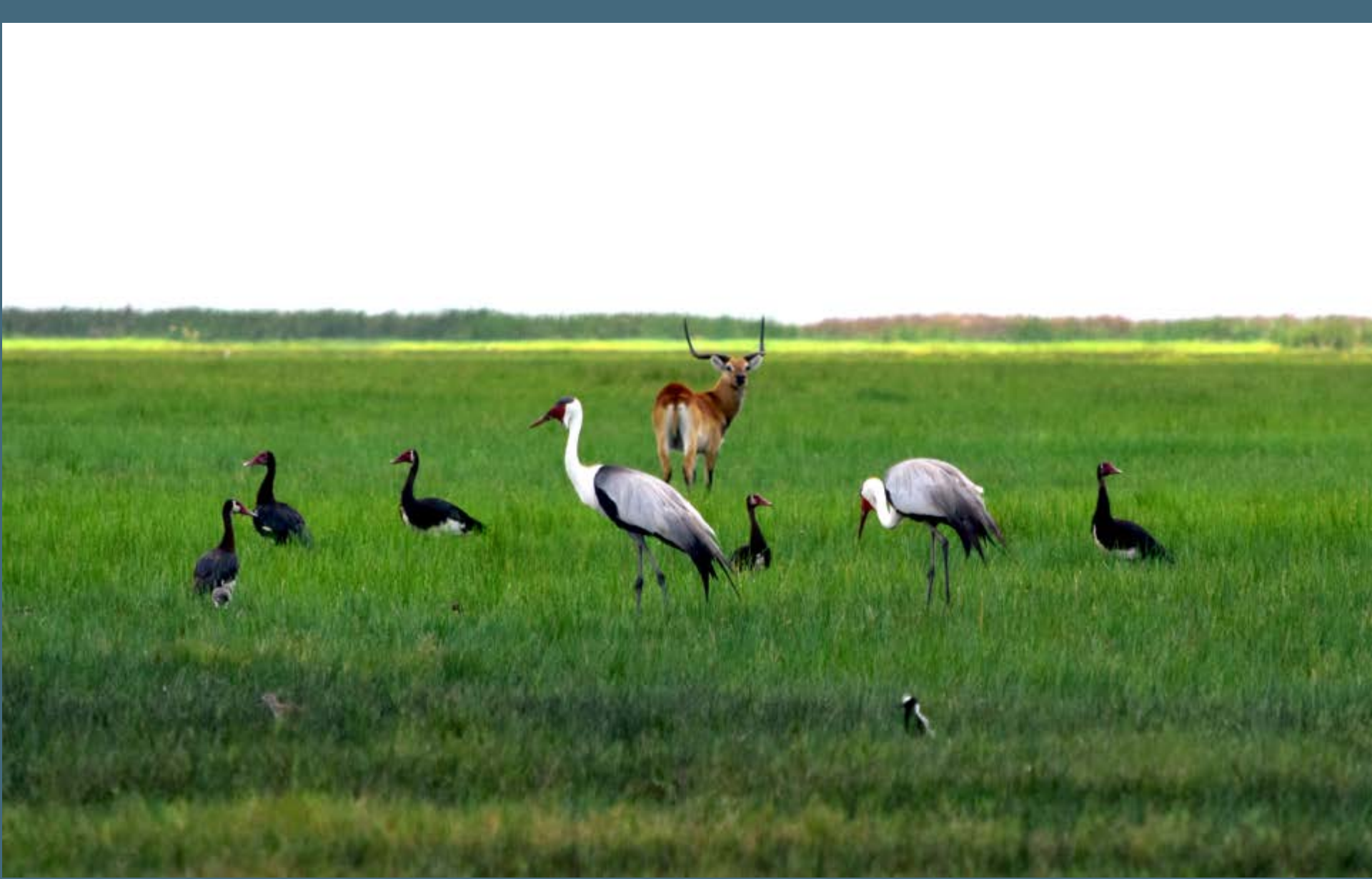
- More than 470 bird species recorded on Kafue Flats
- Wetland of International Importance - Ramsar Convention
- Important Bird Area (IBA) – Birdlife International



One third (>3000) of the world's Wattled Cranes –  
the stronghold for Africa's rarest crane species



All of the world's Kafue lechwe



Ecological interdependencies



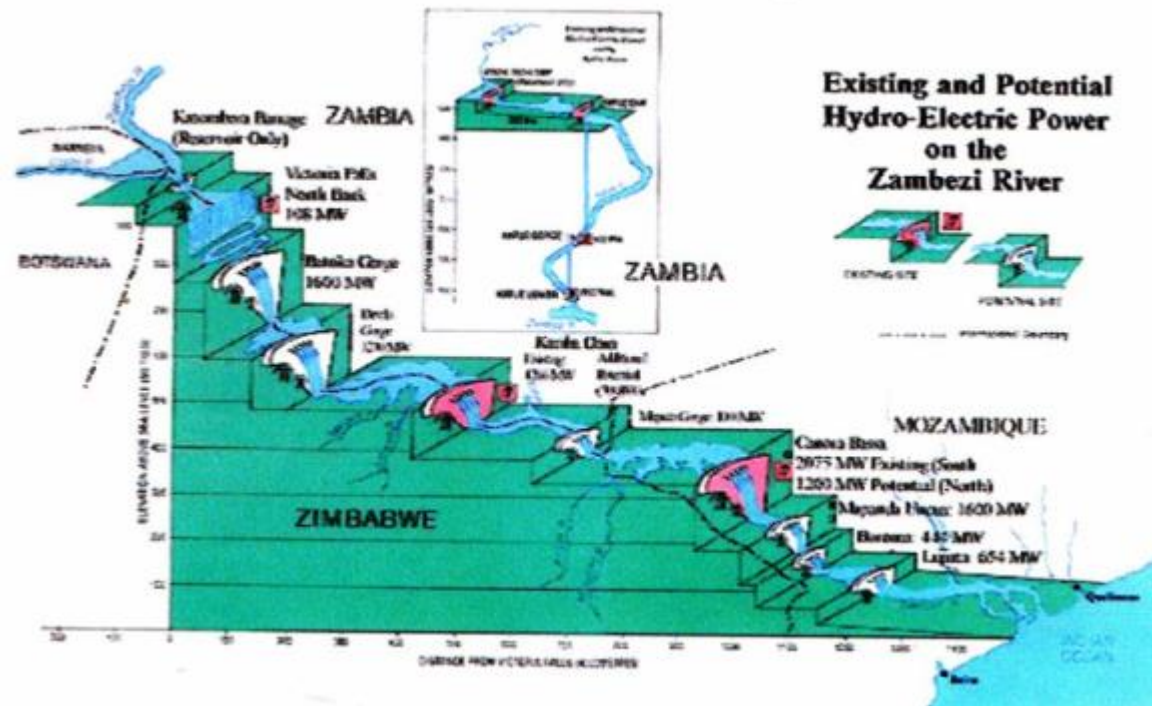
Livelihoods derived from floodplain ecosystem services  
for hundreds of thousands of people

# Getting the water right

1. What is impact of river-floodplain changes on biodiversity and human livelihoods?
2. Is enough water available to reverse negative impacts (given hydropower constraints)?
3. Are there trade-offs among water requirements for different users and concerns?



# Rethinking Hydropower dam operation



Energy optimization

>5000 MW installed

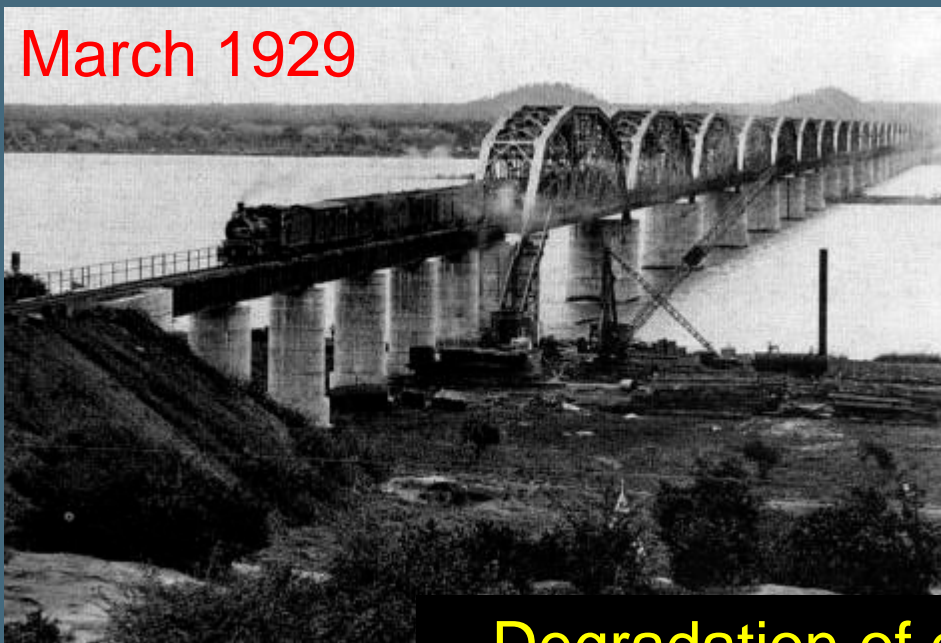
>13 000 MW potential

Subordinate functions

flood control

water supply

reservoir development



Degradation of downstream flows, sediments, water quality







**Loss of downstream ecosystems  
and biodiversity**





Reduced capacity to adapt and cope with climate change



Zambezi basin “worst” climate future among 11 African river basins (IPCC) ; 26-40% reduction in water availability by 2050 (Strzepek and McCluskey 2006); risky investment for hydropower/water resources (Beilfuss 2012)





## Vulnerable Wattled Cranes

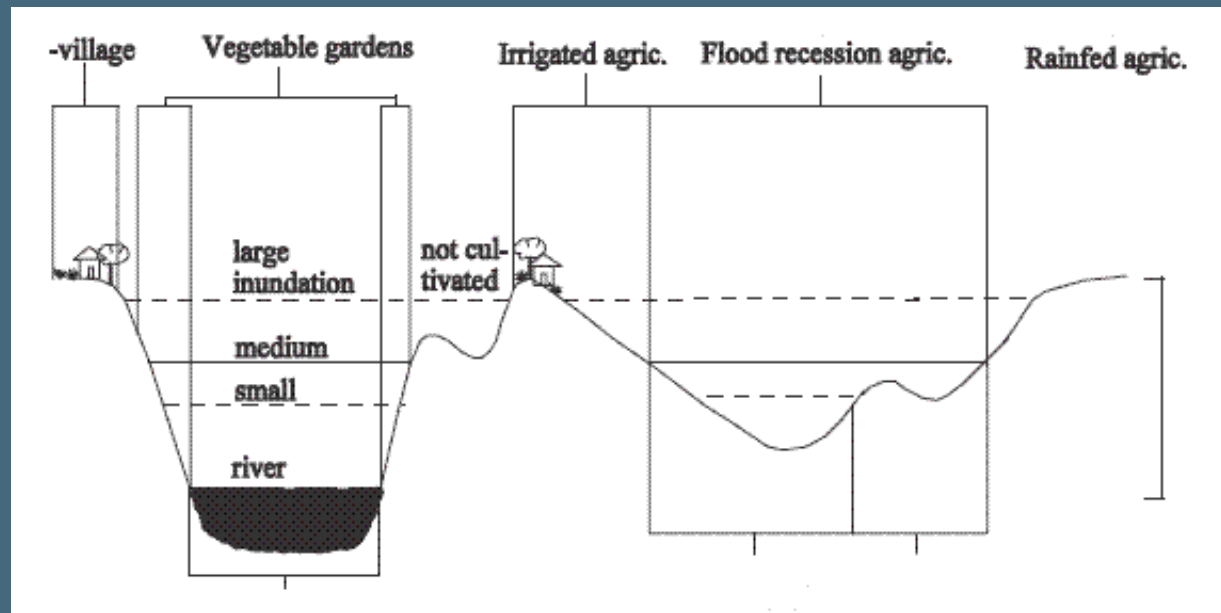
- Restore main food source (*Eleocharis* rush tubers) and decrease nest vulnerability to fire
- Substantial floodplain breeding grounds could recover with correctly timed annual floods of sufficient duration



## Freshwater fisheries

- 30,000-50,000 tonnes per annum under restored flooding regime
- Most important source of protein and income for rural households





## Flood-dependent agriculture

- Restore natural timing of floods for riverbank cropping; increase area for flood recession crops; reduce salinity intrusion
- Economic valuation of annual floods for agriculture suggests \$US millions/annum



*Rare and threatened wildlife*



*Tourism*



*Grazing lands*



*People*

*Materials*



*Fisheries*



*Rare and threatened wildlife*



*People*

*Tourism*



*Fertile soils*

*Culture*



*Materials*



*Grazing lands*



*Fisheries*

*Hydropower*

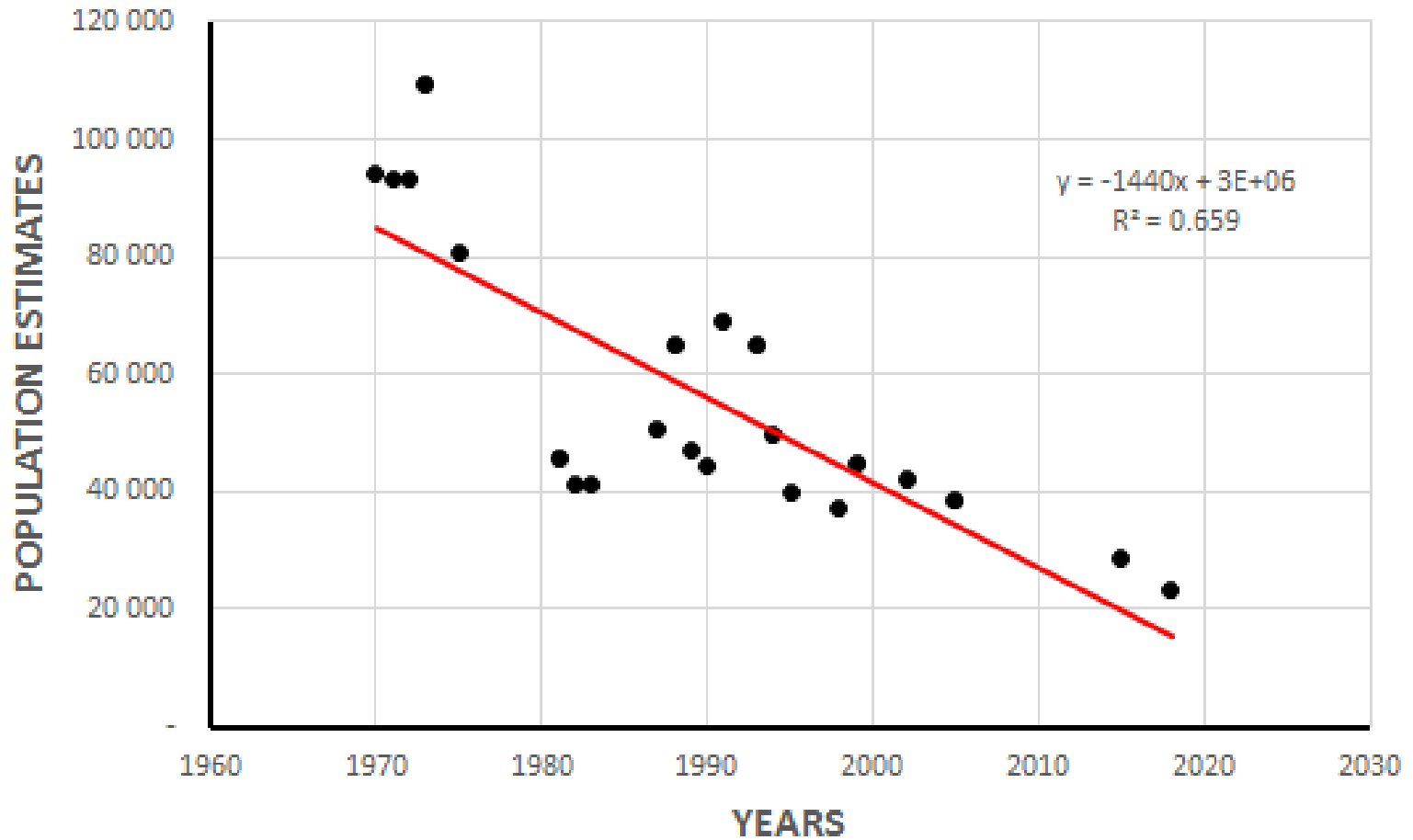


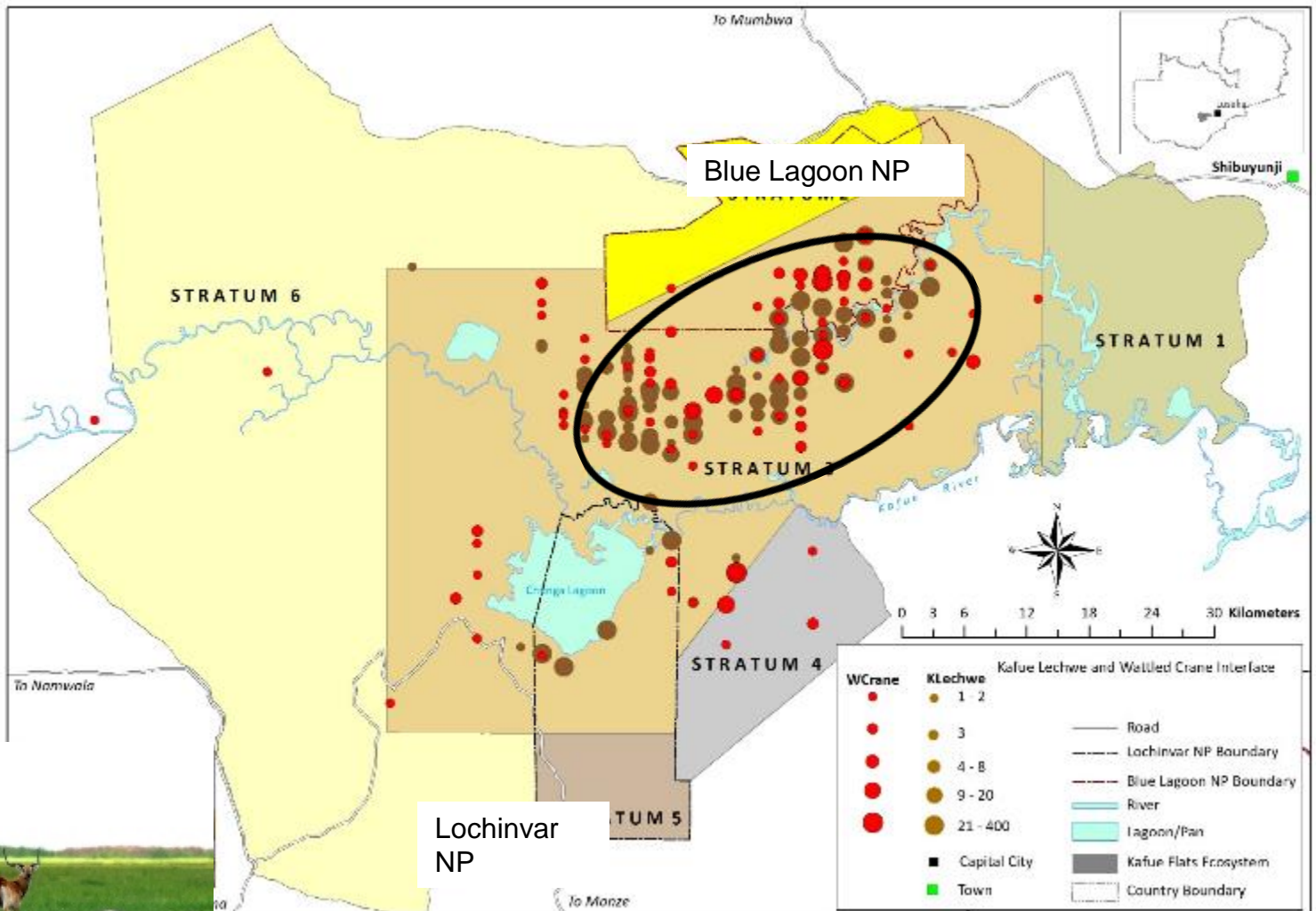


# Urgent need to target local conservation impact



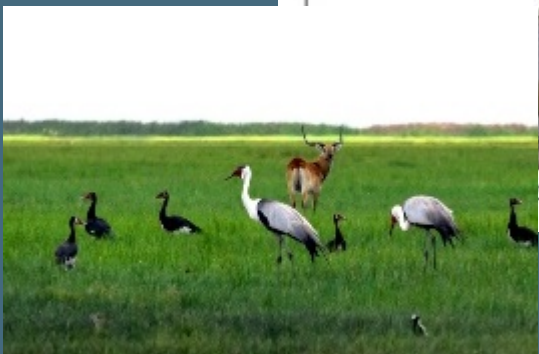
## POPULATION TRENDS - KAFUE LECHWE

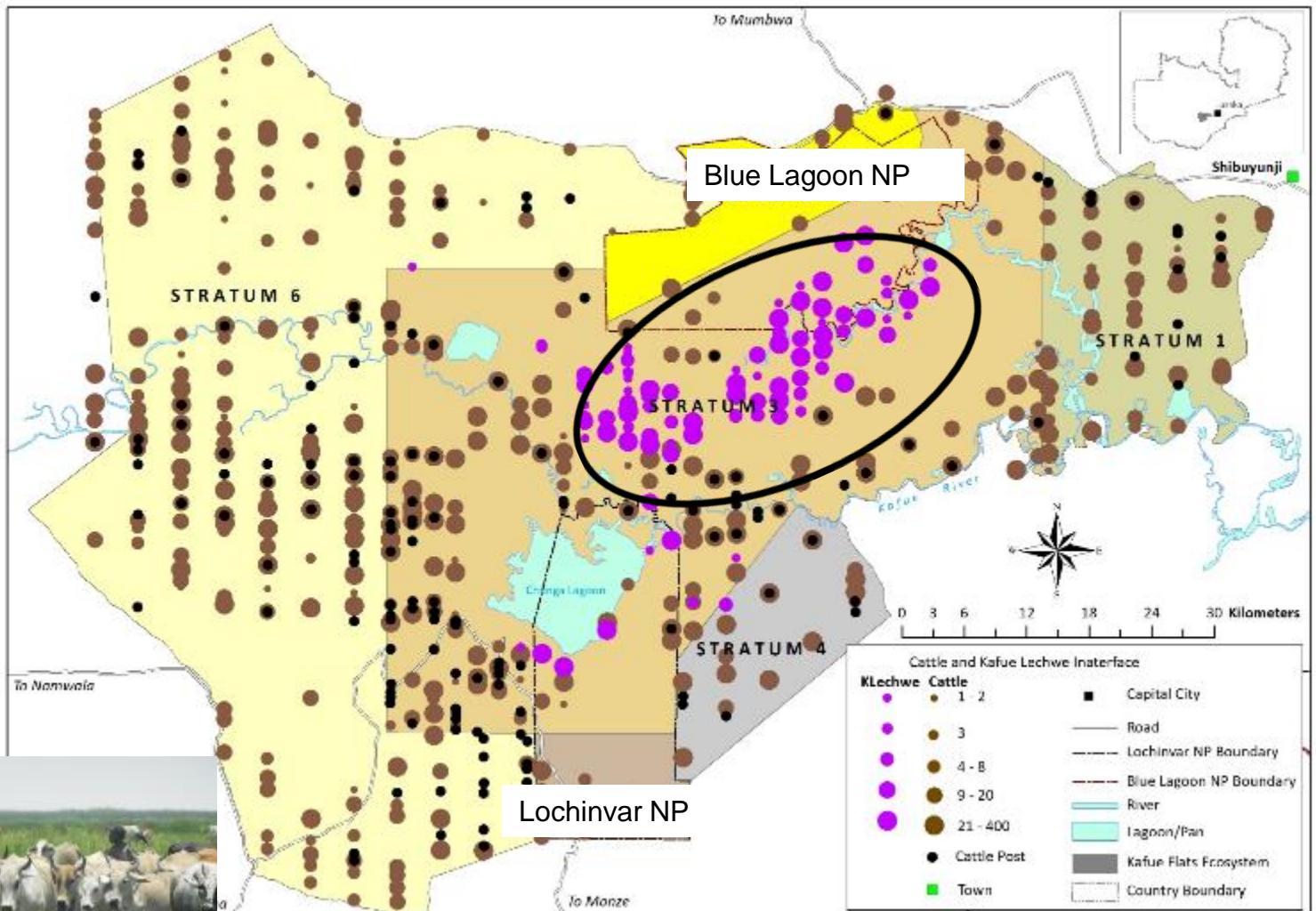


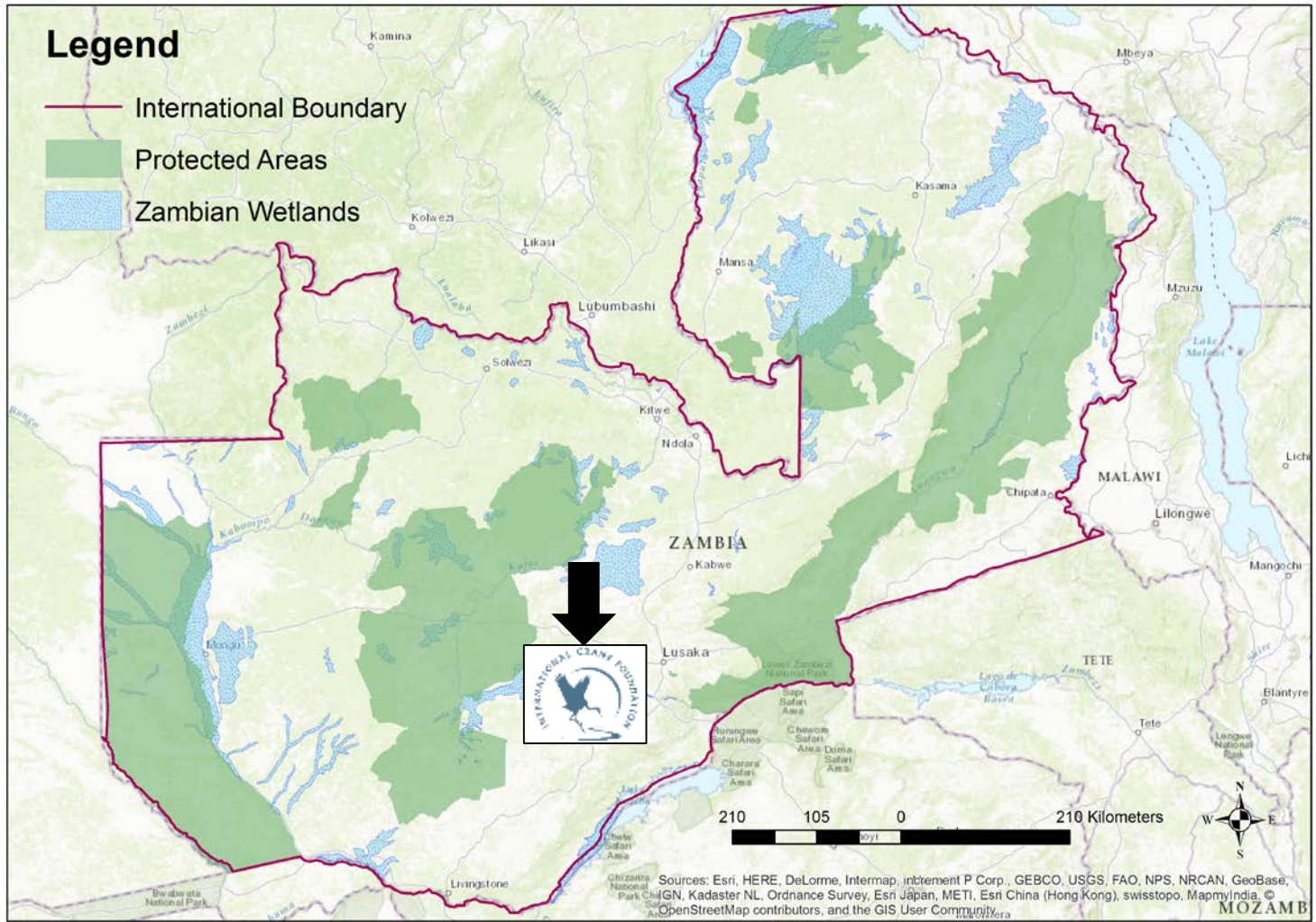
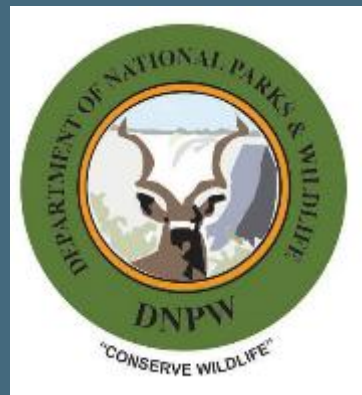


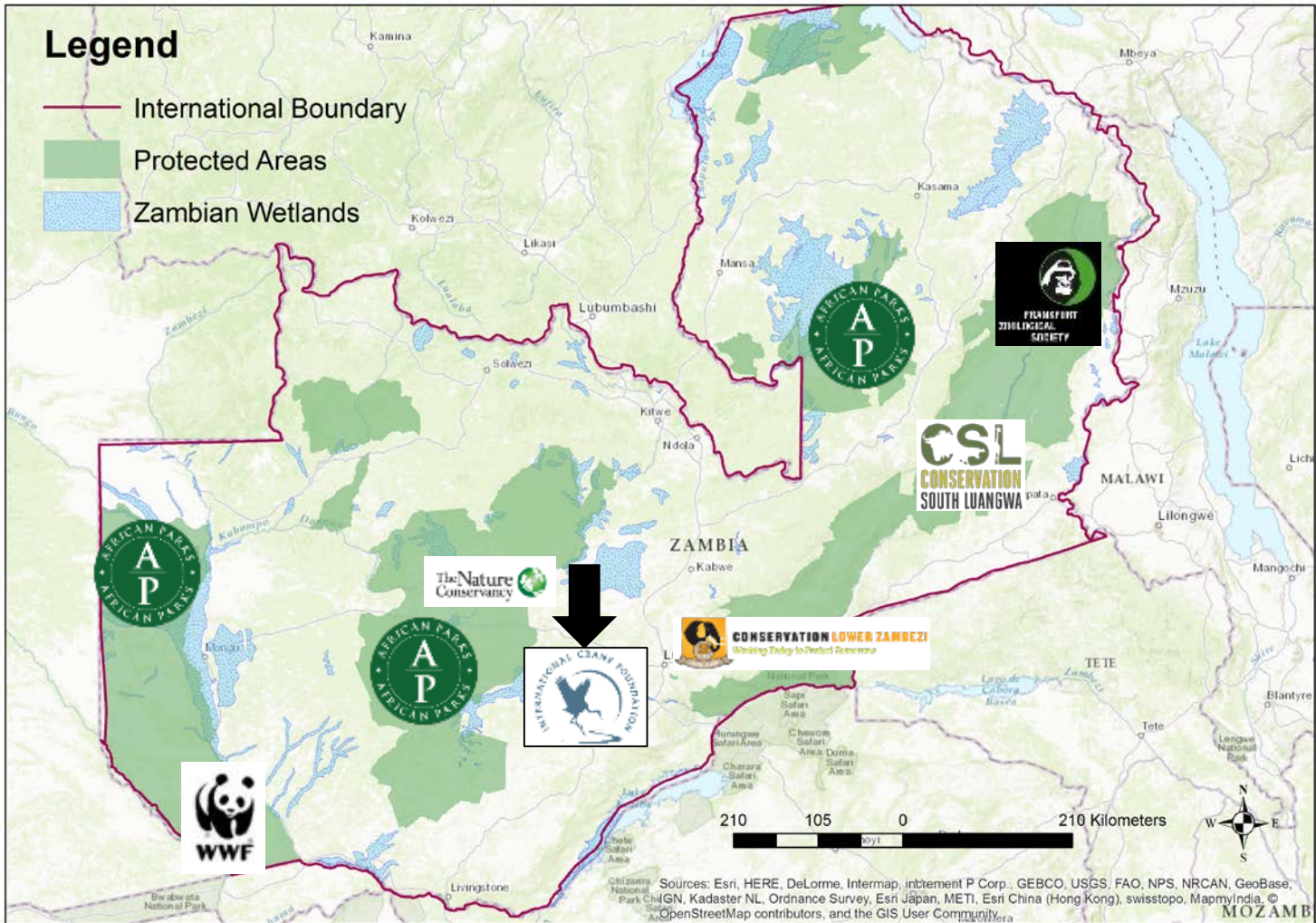
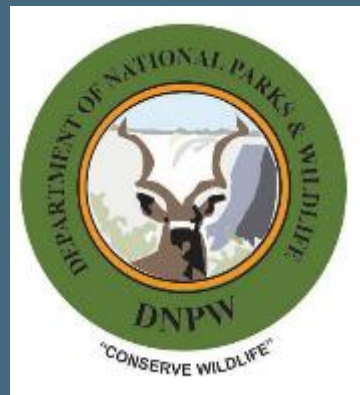
Lochinvar NP

Blue Lagoon NP









# Restoring the Kafue Flats as a new and unique African National Parks conservation success story

The New York Times

Opinion

FIXES

## A Comeback for African National Parks

As wildlife authorities on the continent work with nonprofit organizations to secure ecologically valuable landscapes, populations of large mammals have grown.

By Patrick Adams

Mr. Adams is a journalist who reports on solutions to social problems.

Feb. 20, 2019



Gorongosa National Park in Mozambique is a rare success story. The number of large mammals there has increased more than 700 percent over the past decade. Christopher Scott/Gallo Images, via Getty Images

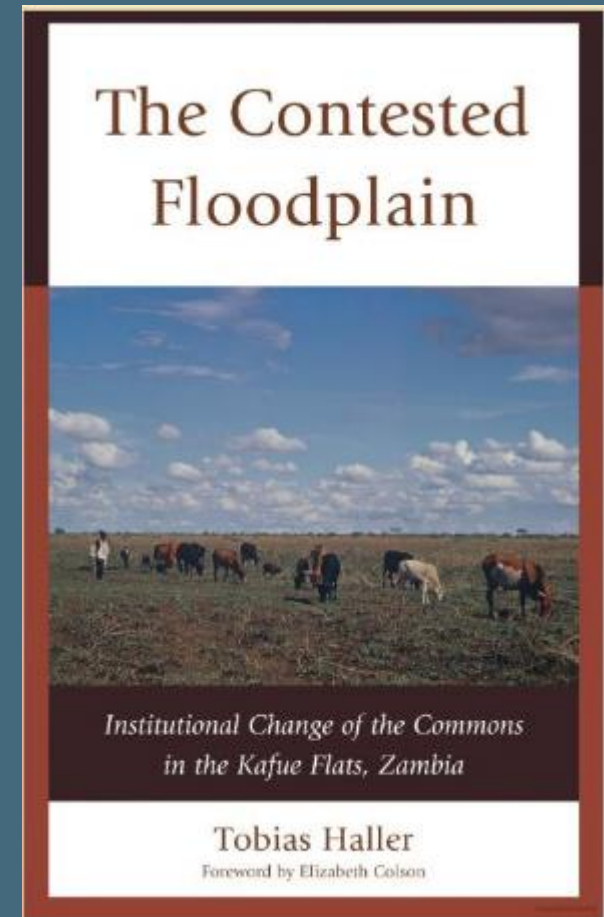


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# Kafue Flats Restoration Program

- Advance a new “Working Wetland” protected area model built on ecosystem services providing livelihoods and biodiversity
- Strengthen park management by supporting warden, rangers, village scouts infrastructure through Zambia DNPW
- Restore ecological integrity of floodplain system – water, invasives, fire management
- Engage community resource board and chiefaincies to re-balance of conservation and sustainable livelihoods—focusing on livestock and fisheries
- Use science-based, adaptive management to learn and improve
- Advance ecotourism in a phased approach as management and restoration progresses





# Kafue Flats Vision: A Sustainable Working Wetland for all





CONSERVATION INTERNATIONAL



the Jane Goodall Institute



The Nature Conservancy  
Protecting nature. Powering life.



WORLD RESOURCES INSTITUTE



# AFRICA BIODIVERSITY COLLABORATIVE GROUP



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Sharing experience and lessons learned from co-management of Africa's parks





Please visit us or travel with us to magical crane landscapes  
and learn more!